

## Assignment -4

### Inventory Management System for Retailers –

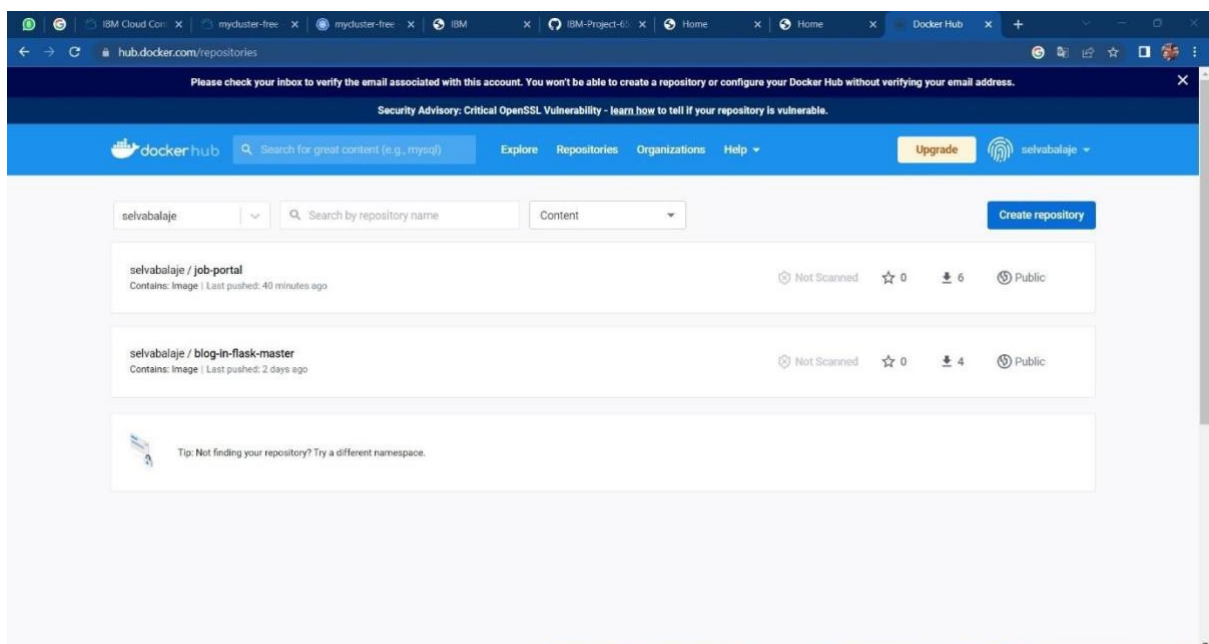
Student Name	Esaiveni E
Student Roll Number	960519104024

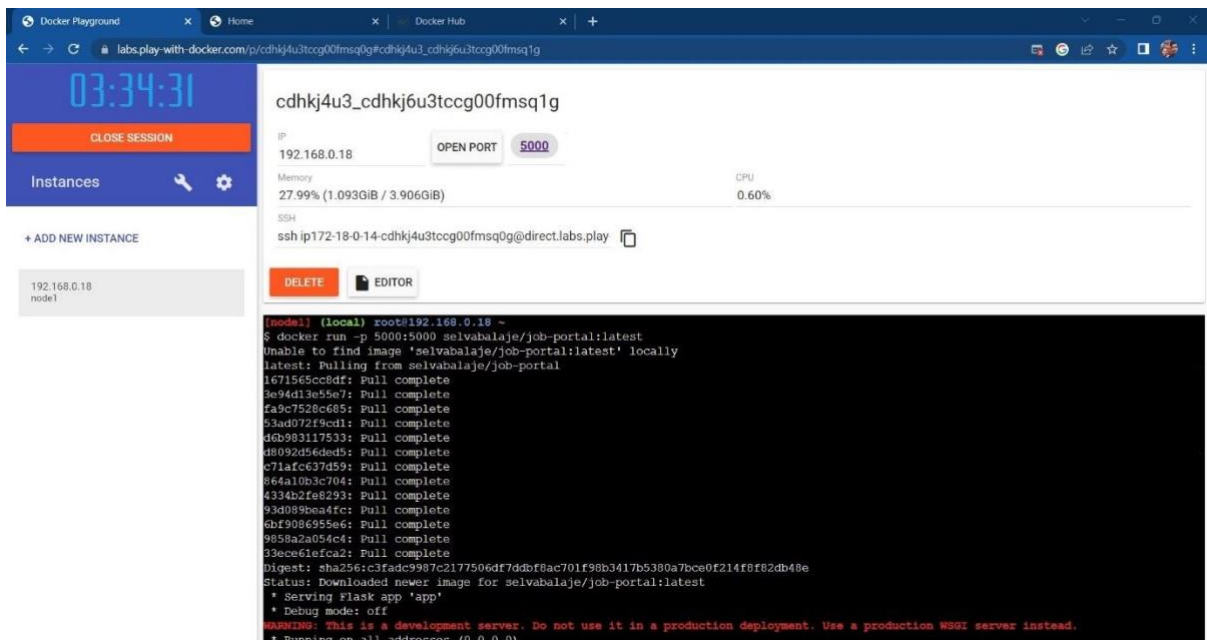
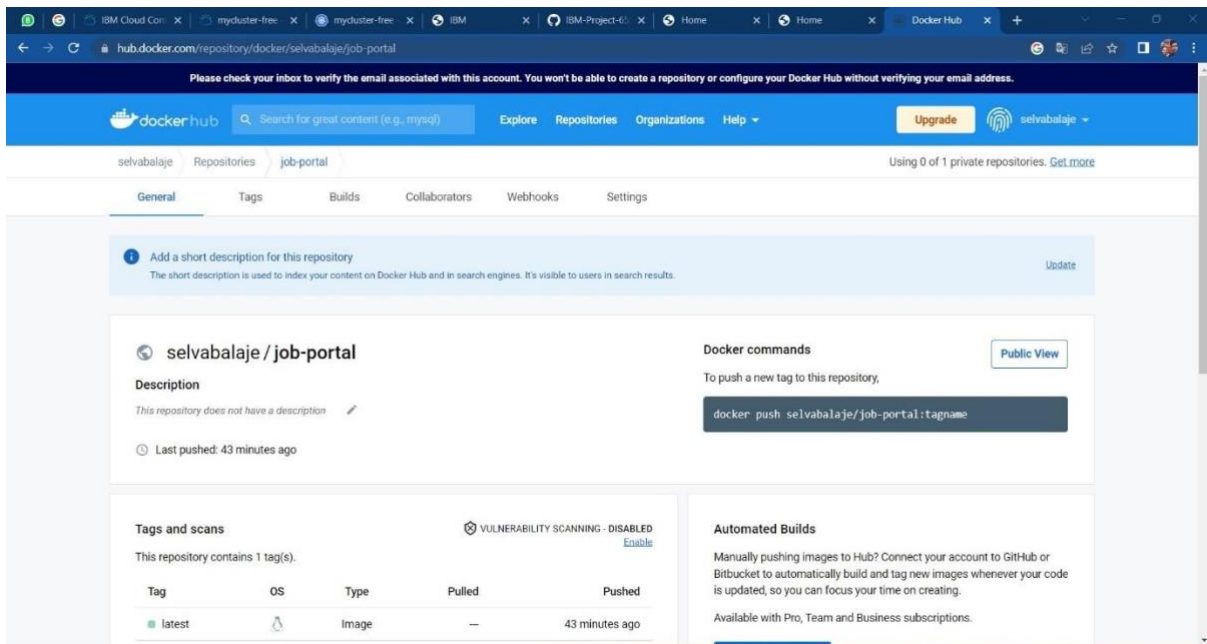
#### Question-1:

1. Pull an Image from docker hub and run it in docker playground.
2. Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.
3. Create a IBM container registry and push docker image of flask application or job portal app.
4. Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in Nodeport.

**Solution: \*\*All the required files are uploaded in the ASSIGNMENTS/PADMANABAN P (TEAM LEADER)/ASSIGNMENT 4 folder in the Git repo. Please verify it sir/mam.**

**Step 1:** Pull an Image from docker hub and run it in docker playground.





Docker Playground Home Docker Hub

labs.play-with-docker.com/p/cdhkj4u3tccg00fmsq0g#cdhkj4u3\_cdhkj6u3tccg00fmsq1g

03:33:35

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18 node1

cdhkj4u3\_cdhkj6u3tccg00fmsq1g

IP: 192.168.0.18 OPEN PORT: 5000

Memory: 28.00% (1.094GiB / 3.906GiB) CPU: 0.47%

SSH: ssh ip172-18-0-14-cdhkj4u3tccg00fmsq0g@direct.labs.play

DELETE EDITOR


```
864a10b3c704: Pull complete
4334b2fe8293: Pull complete
93d089bea4fc: Pull complete
6bf908e955e6: Pull complete
9858a2a054c4: Pull complete
33ee61eafa2: Pull complete
Digest: sha256:c3fadc9987c2177506df7ddb8ac701f98b3417b5380a7bce0f214f0f82db49e
Status: Downloaded newer image for selvalalaje/job-portal:latest
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
press CTRL+C to quit
C[pedes] (local) root@192.168.0.18 ~
$ docker run -p 5000:5000 selvalalaje/job-portal:latest
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
```

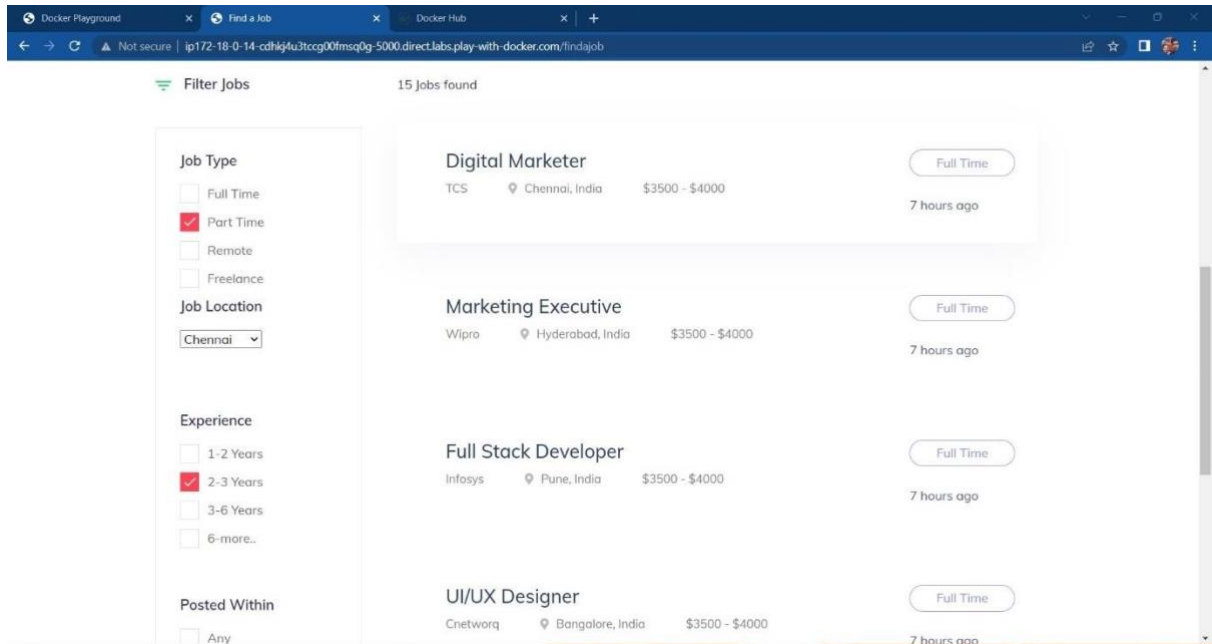
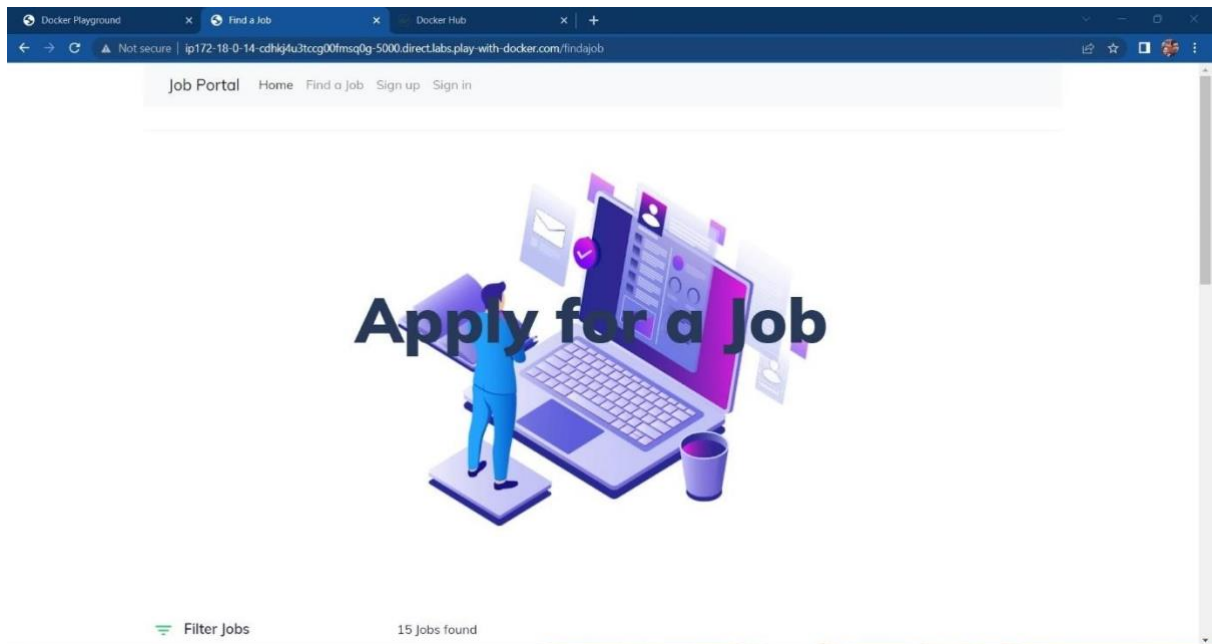
Docker Playground Home Docker Hub

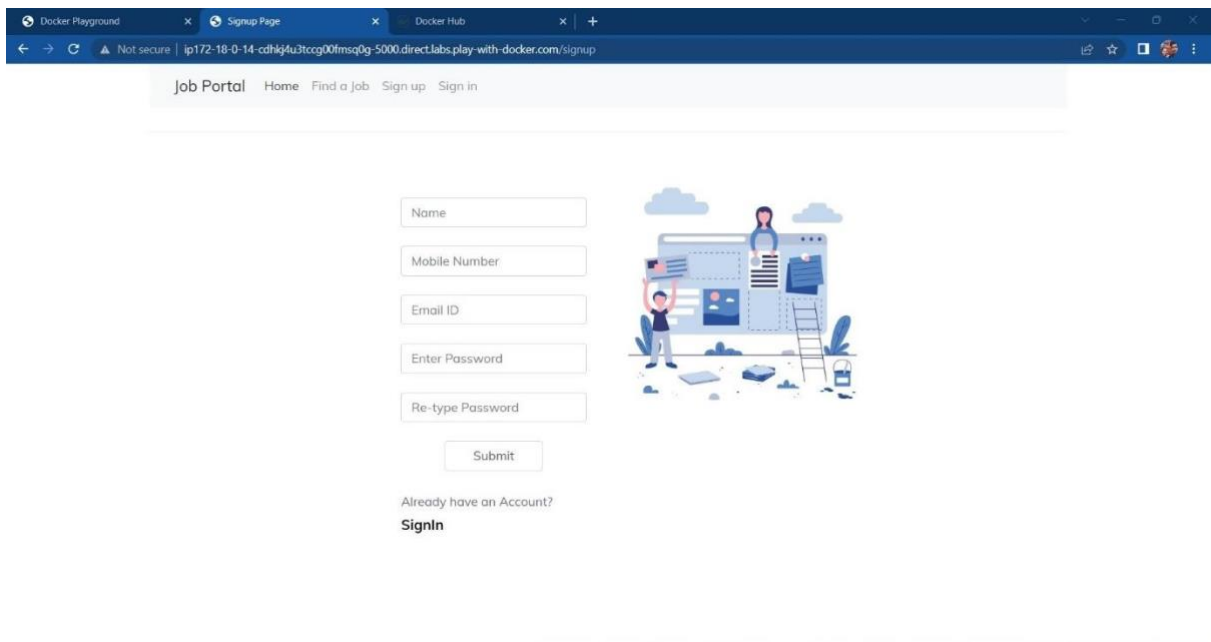
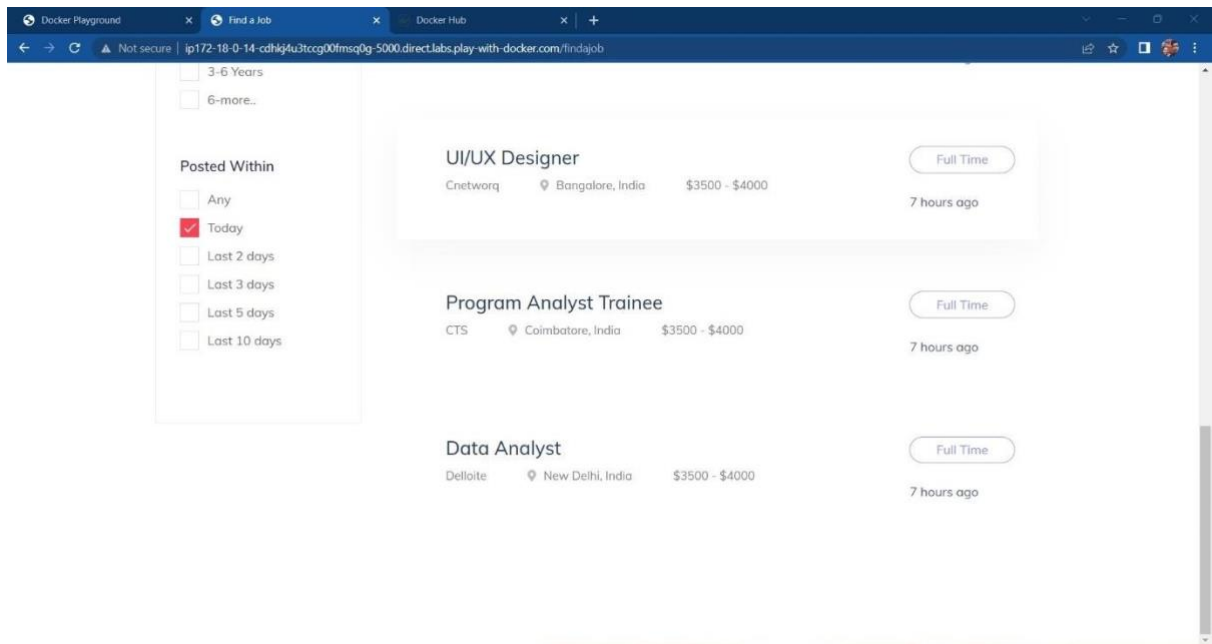
Not secure | ip172-18-0-14-cdhkj4u3tccg00fmsq0g-5000.direct.labs.play-with-docker.com

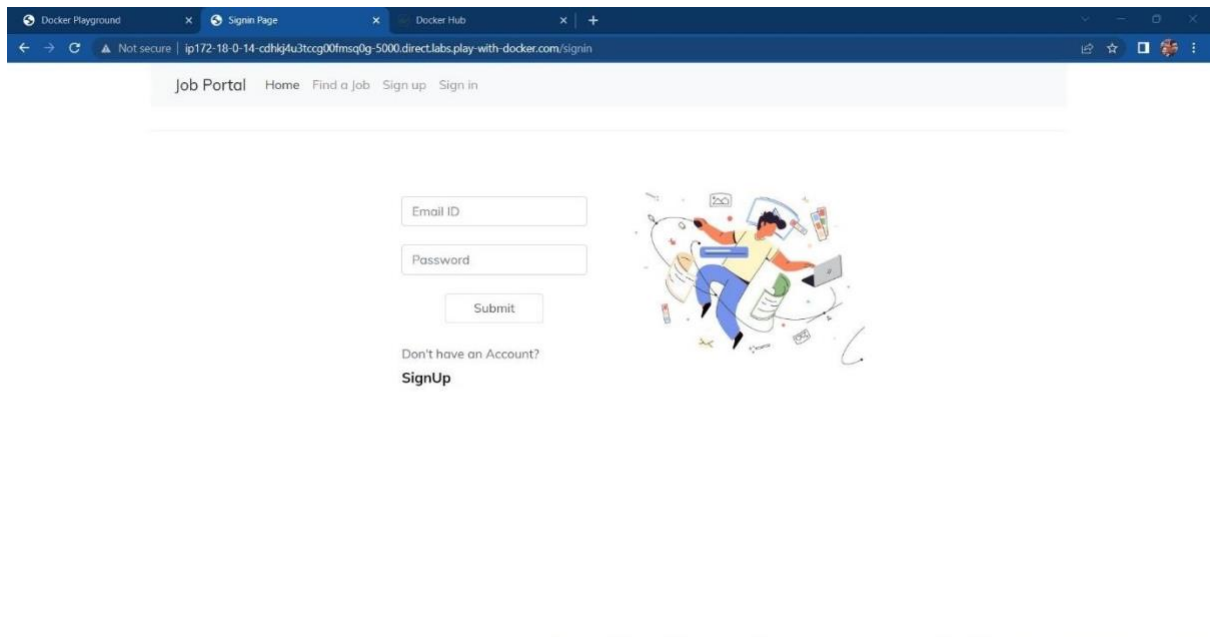
Job Portal Home Find a Job Sign up Sign in

Find the most exciting startup jobs

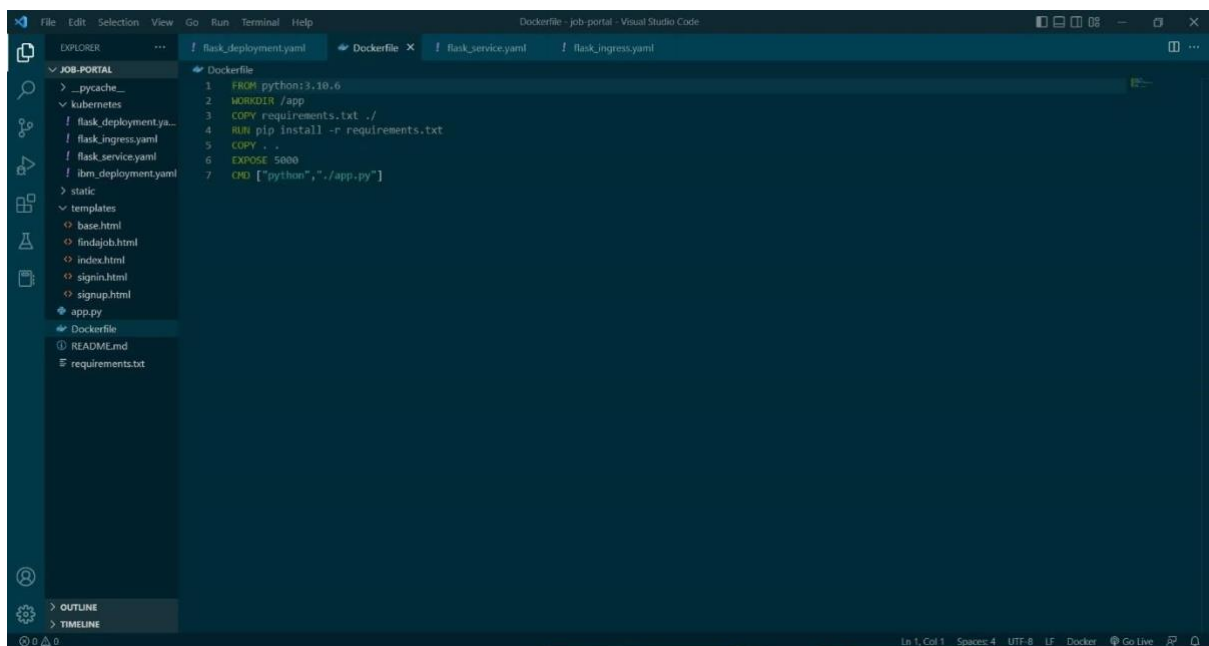


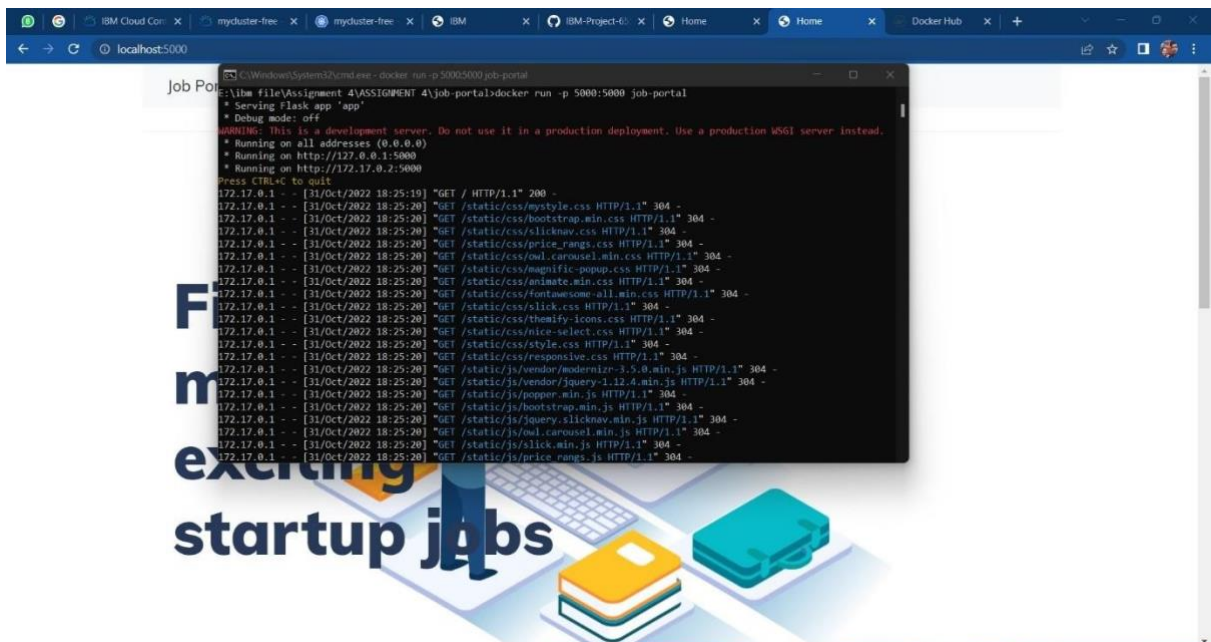
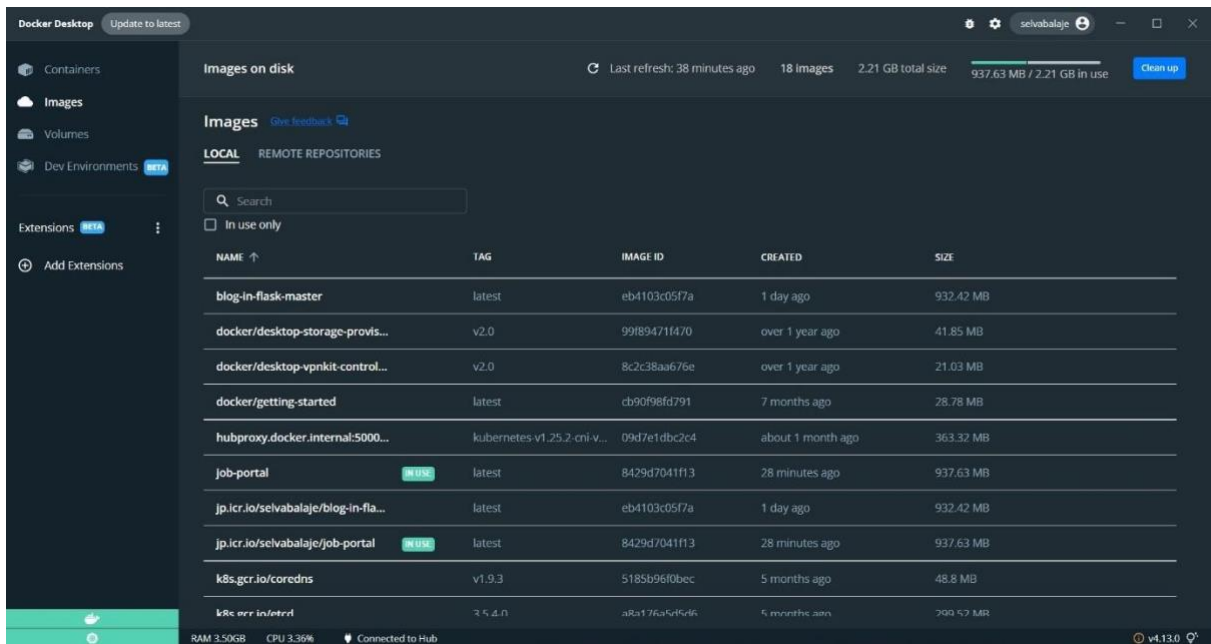




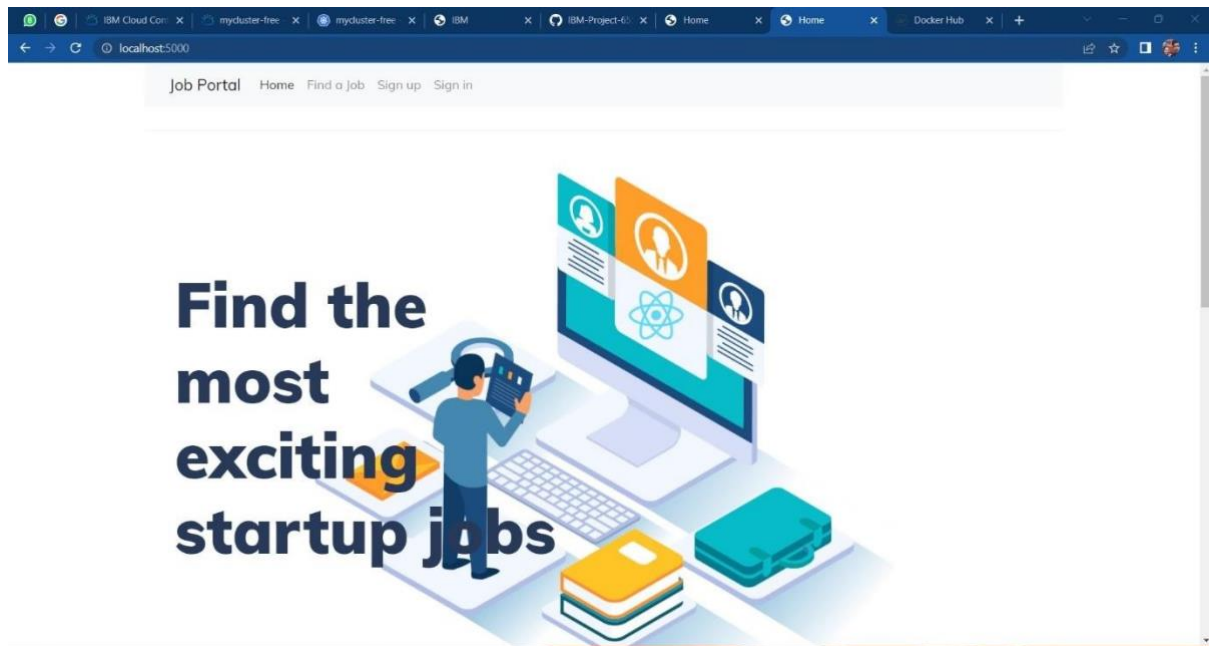


**Step 2:** Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.

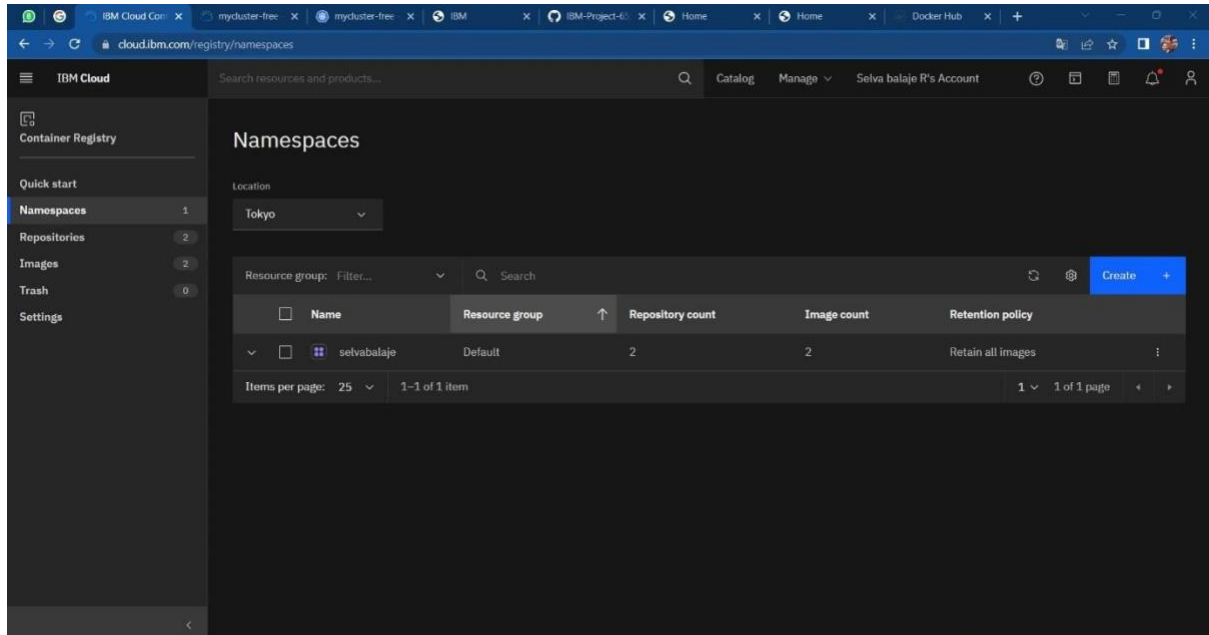








**Step 3:** Create a IBM container registry and push docker image of flask application or job portal app.





IBM Cloud Con x mycluster-free x mycluster-free x IBM x IBM-Project-60 x Home x Home x Docker Hub x

cloud.ibm.com/registry/repos

IBM Cloud

Search resources and products...

Container Registry

Quick start

Namespaces 1

Repositories 2

Images 2

Trash 0

Settings

## Repositories

Location: Tokyo

Search

Create +

<input type="checkbox"/>	Name	Image count	Namespace	Last updated	
<input checked="" type="checkbox"/>	job-portal jp.icr.io/selvabalaje/job-portal	1	selvabalaje	1 hour ago	:
<input checked="" type="checkbox"/>	blog-in-flask-master jp.icr.io/selvabalaje/blog-in-flask-master	1	selvabalaje	2 days ago	:

Items per page: 25 1-2 of 2 items 1 1 of 1 page

IBM Cloud Con x mycluster-free x mycluster-free x IBM x IBM-Project-60 x Home x Home x Docker Hub x

cloud.ibm.com/registry/images

IBM Cloud

Search resources and products...

Container Registry

Quick start

Namespaces 1

Repositories 2

Images 2

Trash 0

Settings

## Images

Location: Tokyo

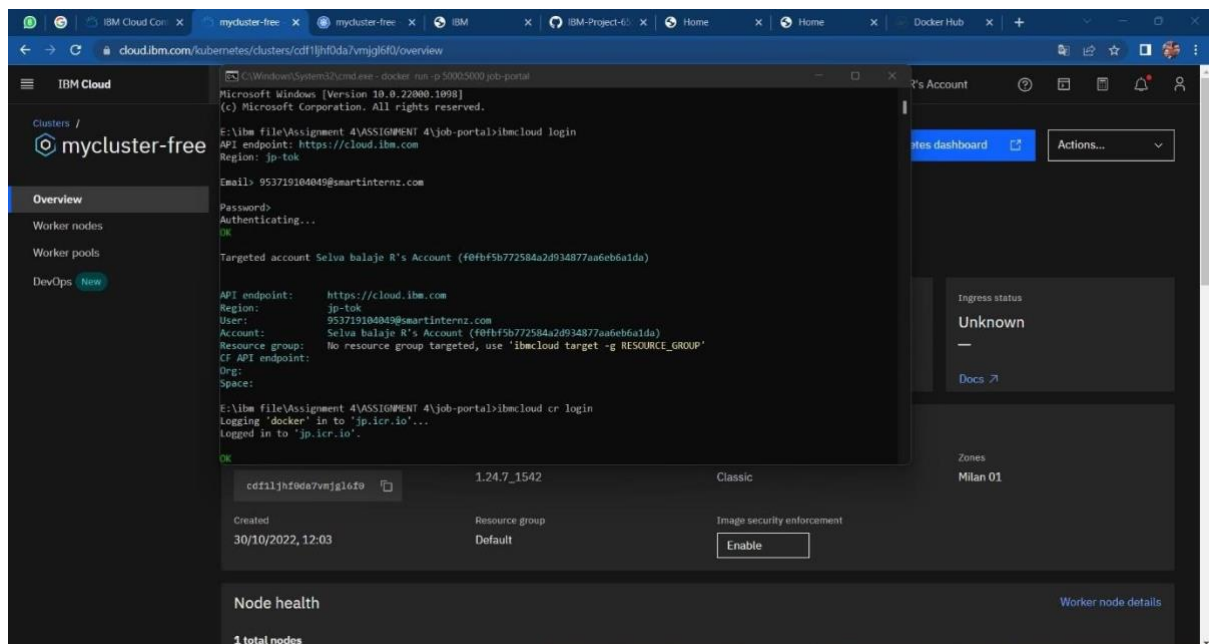
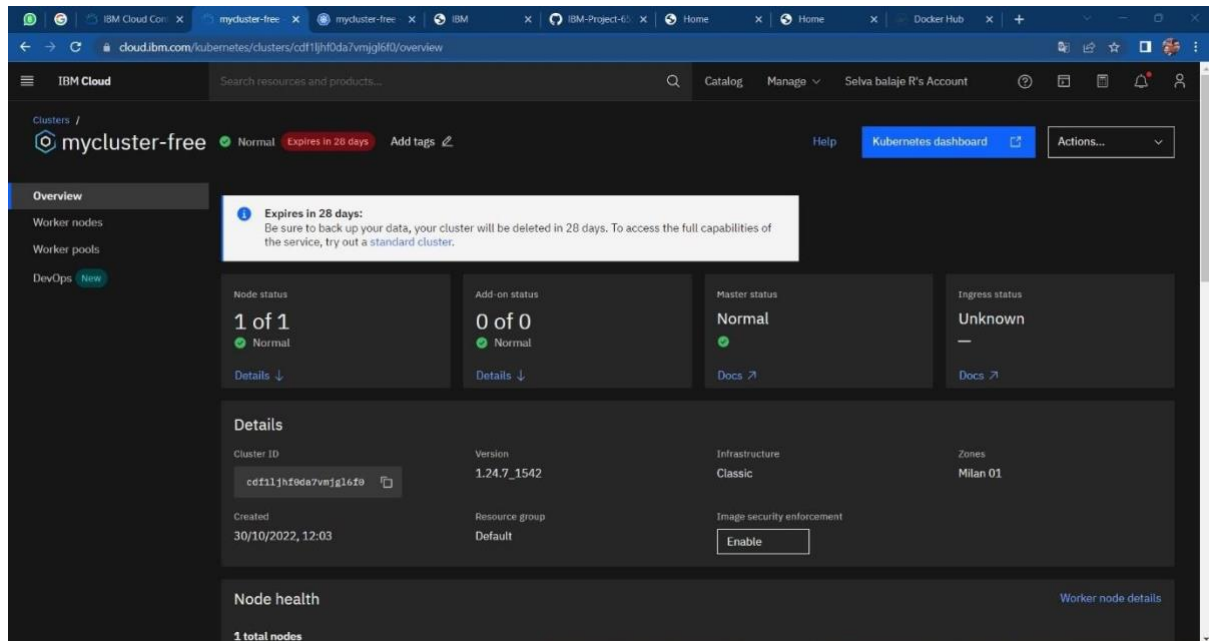
View by: Digest Search

Create +

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size	Security status	
<input type="checkbox"/>	selvabalaje/job-portal@sha256:c3fadc9987c2...	latest	Docker	1 hour ago	360 MB	24 issues	:
<input type="checkbox"/>	selvabalaje/blog-in-flask-master@sha256:d27973686891...	latest	Docker	2 days ago	356 MB	23 issues	:

Items per page: 25 1-2 of 2 items 1 1 of 1 page

**Step 4:** Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in Nodeport.



IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps [New](#)

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name      Version  Status  Private endpoints supported
container-registry 1.0.2    true    false
container-service[kubernetes-service/ks] 1.0.459 false    false
observe-service[ob] 1.0.82    false

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>docker push jp.icr.io/selvahalaje/job-portal
Using default tag: latest
The push refers to repository [jp.icr.io/selvahalaje/job-portal]
d1e94296717c: Pushed
21df097abdb1: Mounted from selvahalaje/blog-in-flask-master
79270488747d: Mounted from selvahalaje/blog-in-flask-master
1646c2188de8: Mounted from selvahalaje/blog-in-flask-master
bfc1deb8136e: Mounted from selvahalaje/blog-in-flask-master
1f12318682dc: Mounted from selvahalaje/blog-in-flask-master
3d6eb1152931: Mounted from selvahalaje/blog-in-flask-master
100796cdf3b1: Mounted from selvahalaje/blog-in-flask-master
54acb5a6fa0b: Mounted from selvahalaje/blog-in-flask-master
8d51c618126f: Mounted from selvahalaje/blog-in-flask-master
9ff6e4d46744: Mounted from selvahalaje/blog-in-flask-master

cd11jhf0da7vmjgl6f0 1.24.7_1542 Classic

Created 30/10/2022, 12:03 Resource group Default Image security enforcement Enable

Node health 1 total nodes
```

Worker node details

IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps [New](#)

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>docker push jp.icr.io/selvahalaje/job-portal
Using default tag: latest
The push refers to repository [jp.icr.io/selvahalaje/job-portal]
d1e94296717c: Pushed
21df097abdb1: Mounted from selvahalaje/blog-in-flask-master
79270488747d: Mounted from selvahalaje/blog-in-flask-master
1646c2188de8: Mounted from selvahalaje/blog-in-flask-master
bfc1deb8136e: Mounted from selvahalaje/blog-in-flask-master
1f12318682dc: Mounted from selvahalaje/blog-in-flask-master
3d6eb1152931: Mounted from selvahalaje/blog-in-flask-master
100796cdf3b1: Mounted from selvahalaje/blog-in-flask-master
54acb5a6fa0b: Mounted from selvahalaje/blog-in-flask-master
8d51c618126f: Mounted from selvahalaje/blog-in-flask-master
9ff6e4d46744: Mounted from selvahalaje/blog-in-flask-master
a89d1d47b5a1: Mounted from selvahalaje/blog-in-flask-master
655ed1b7a428: Mounted from selvahalaje/blog-in-flask-master
latest: digest: sha256:c3fadc99b7c21775b6d76dbfba01f9bb3417b5380a7bce0f214f8f82db48e size: 3054

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubect1 config current-context
mycluster-free/cd11jhf0da7vmjgl6f0

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubect1 apply -f kubernetes/ibm_deployment.yaml
Unable to connect to the server: failed to refresh token: oauth2: cannot fetch token: 400 Bad Request
Response: {"errorCode": "BXNIM408E", "errorMessage": "Provided refresh token is expired.", "context": {"requestId": "en2wd2c-560af8775e6a4728a15cale980f36c", "requestType": "Incoming_Identity_token", "userAgent": "Go-http-client/2.0", "url": "https://identity-1-ap-north-1.amazonaws.com", "instanceId": "i-10-14611-293c9a8-6778f68cf-zfpwg", "threadId": "c5689", "host": "i-10-14611-293c9a8-6778f68cf-zfpwg", "startTime": "31.10.2022 18:18:36:519 UTC", "endTime": "31.10.2022 18:18:36:526 UTC", "elapsedTime": "77", "locale": "en_US", "clusterName": "iam-id-prod-ap-north-tok84"}}

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud ks cluster config --cluster cd11jhf0da7vmjgl6f0

cd11jhf0da7vmjgl6f0 1.24.7_1542 Classic

Created 30/10/2022, 12:03 Resource group Default Image security enforcement Enable

Node health 1 total nodes
```

Worker node details

IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps **New**

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/ibm_deployment.yaml
deployment.apps/job-portal created
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/flask_service.yaml
service/flask-app-service configured
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/flask_ingress.yaml
ingress.networking.k8s.io/flask-app-ingress unchanged
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl describe svc flask-app-service
Name: flask-app-service
Namespace: default
Labels: <none>
Annotations: <none>
Selector: app=job-portal
Type: NodePort
IP Family Policy: SingleStack
IP Families: IPv4
IP: 172.21.170.240
IPs: 172.21.170.240
Port: <unset> 5000/TCP
TargetPort: 5000/TCP
NodePort: <unset> 32437/TCP
Endpoints: 172.30.255.18:5000,172.30.255.19:5000,172.30.255.20:5000
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>
```

Created 30/10/2022, 12:03

Resource group Default

Image security enforcement **Enable**

Node health 1 total nodes

Worker node details

Ingress status Unknown

Docs

Zones Milan 01

kubernetes

default

Search

Workloads

Workload Status

Running 2 Deployments

Running 8 Pods

Running 2 Replica Sets

Deployments

Name	Images	Labels	Pods	Created
job-portal	Show all	-	3 / 3	40 minutes ago
blog-in-flask	Show all	-	5 / 5	a day ago

IBM Cloud Container Service (CaaS) console showing the Kubernetes Workloads page for the default namespace.

**Workloads**

**Pods**

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
job-portal-864894f96-5f2sg	Show all	Show all	10.144.216.57	Running	0	1.00m	20.86Mi	41 minutes ago
job-portal-864894f96-lxd2z	Show all	Show all	10.144.216.57	Running	0	1.00m	21.19Mi	41 minutes ago
job-portal-864894f96-pll2g	Show all	Show all	10.144.216.57	Running	0	1.00m	20.70Mi	41 minutes ago
blog-in-flask-575f58686c-wmqff	Show all	Show all	10.144.216.57	Running	0	1.00m	19.82Mi	a day ago
blog-in-flask-575f58686c-6dggg	Show all	Show all	10.144.216.57	Running	0	1.00m	19.95Mi	a day ago
blog-in-flask-575f58686c-4j2g	Show all	Show all	10.144.216.57	Running	0	1.00m	19.97Mi	a day ago
blog-in-flask-575f58686c-8gkts	Show all	Show all	10.144.216.57	Running	0	1.00m	19.80Mi	a day ago
blog-in-flask-575f58686c-lp64m	Show all	Show all	10.144.216.57	Running	0	1.00m	20.54Mi	a day ago

**Replica Sets**

Name	Images	Labels	Pods	Created
job-portal-864894f96	Show all	Show all	3 / 3	41 minutes ago
blog-in-flask-575f58686c	Show all	Show all	5 / 5	a day ago

IBM Cloud Container Service (CaaS) console showing the Kubernetes Workloads page for the default namespace.

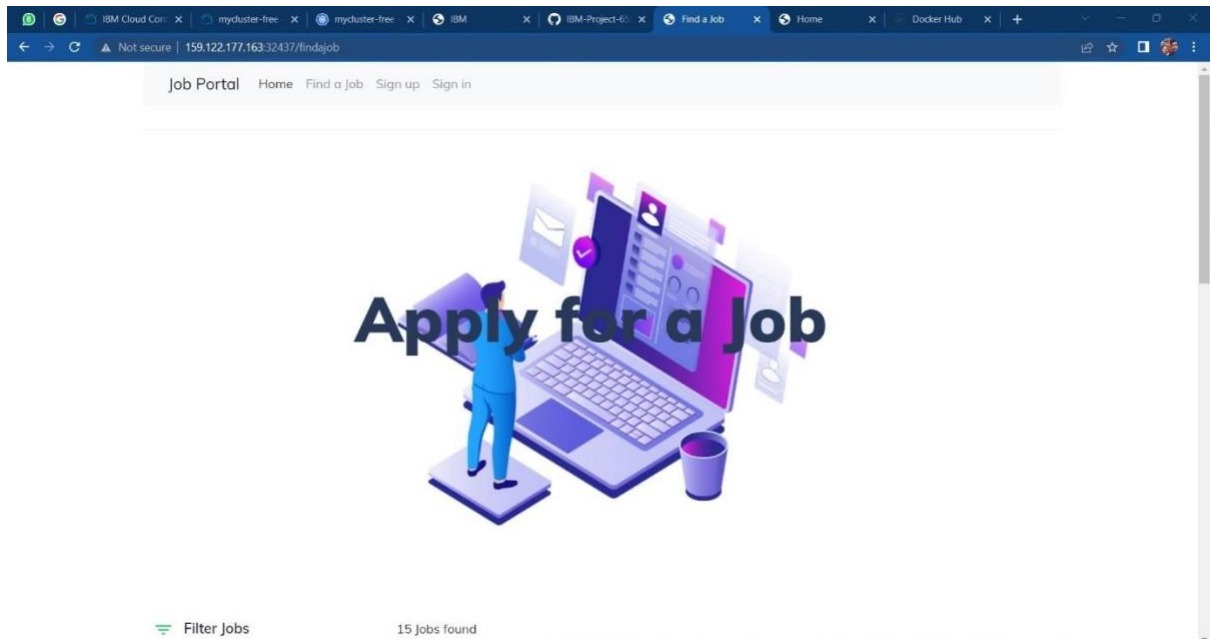
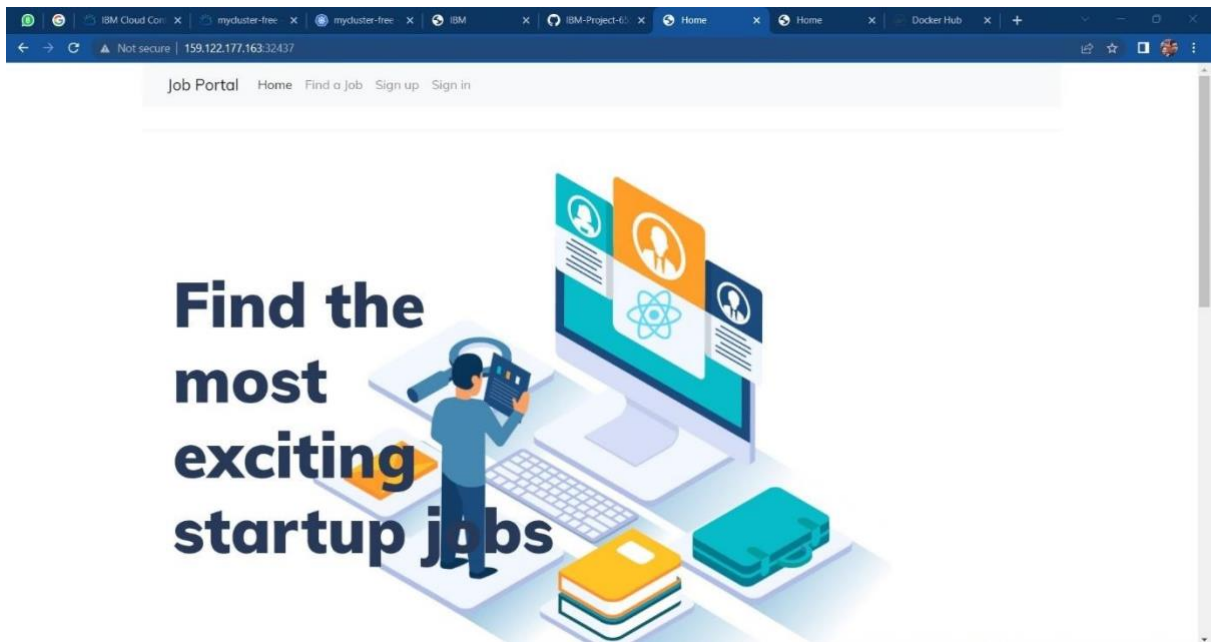
**Workloads**

**Pods**

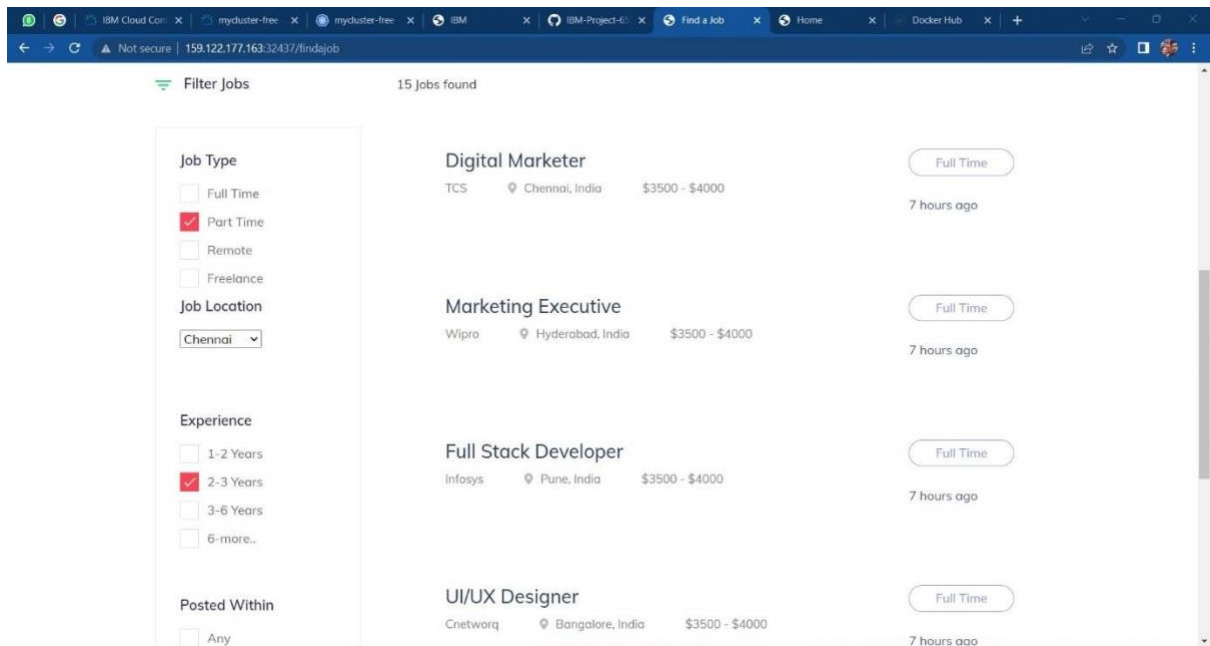
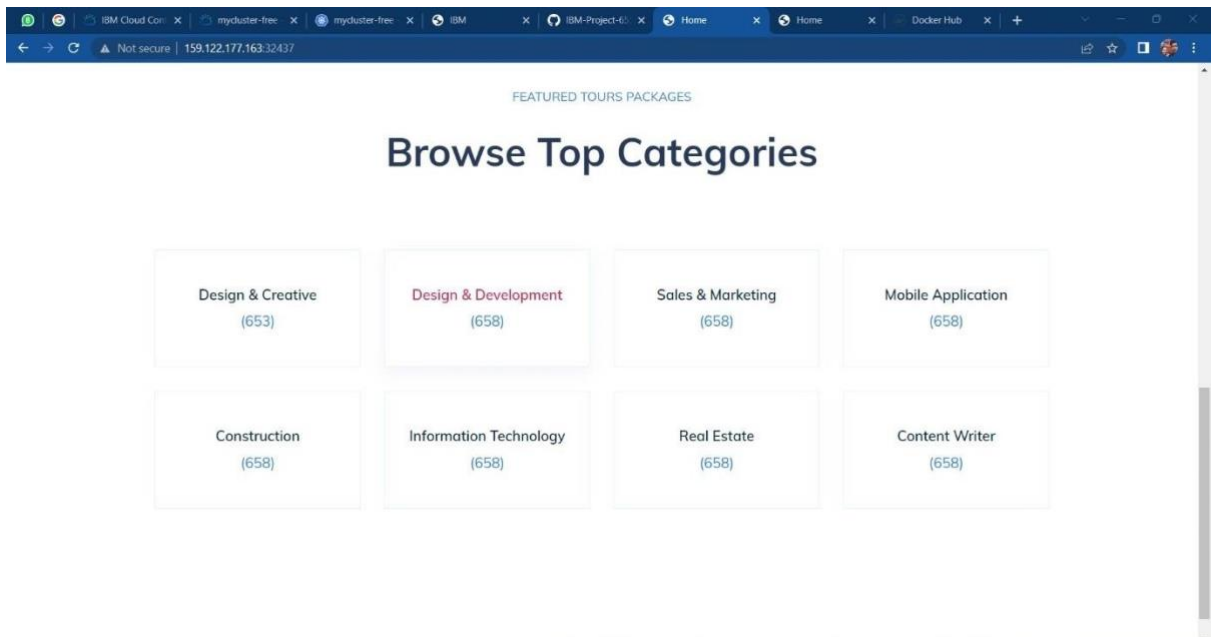
Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
job-portal-864894f96-5f2sg	Show all	Show all	10.144.216.57	Running	0	1.00m	20.86Mi	41 minutes ago
job-portal-864894f96-lxd2z	Show all	Show all	10.144.216.57	Running	0	1.00m	21.19Mi	41 minutes ago
job-portal-864894f96-pll2g	Show all	Show all	10.144.216.57	Running	0	1.00m	20.70Mi	41 minutes ago
blog-in-flask-575f58686c-wmqff	Show all	Show all	10.144.216.57	Running	0	1.00m	19.82Mi	a day ago
blog-in-flask-575f58686c-6dggg	Show all	Show all	10.144.216.57	Running	0	1.00m	19.95Mi	a day ago
blog-in-flask-575f58686c-4j2g	Show all	Show all	10.144.216.57	Running	0	1.00m	19.97Mi	a day ago
blog-in-flask-575f58686c-8gkts	Show all	Show all	10.144.216.57	Running	0	1.00m	19.80Mi	a day ago
blog-in-flask-575f58686c-lp64m	Show all	Show all	10.144.216.57	Running	0	1.00m	20.54Mi	a day ago

**Replica Sets**

Name	Images	Labels	Pods	Created
job-portal-864894f96	Show all	Show all	3 / 3	41 minutes ago
blog-in-flask-575f58686c	Show all	Show all	5 / 5	a day ago









☐ 3-6 Years

☐ 6-more...

Posted Within

☐ Any

☒ Today

☐ Last 2 days

☐ Last 3 days

☐ Last 5 days

☐ Last 10 days

UI/UX Designer

Cnetworq Bangalore, India \$3500 - \$4000

Full Time

7 hours ago

Program Analyst Trainee

CTS Coimbatore, India \$3500 - \$4000

Full Time

7 hours ago

Data Analyst

Delloite New Delhi, India \$3500 - \$4000

Full Time

7 hours ago

Job Portal

Home

Find a Job

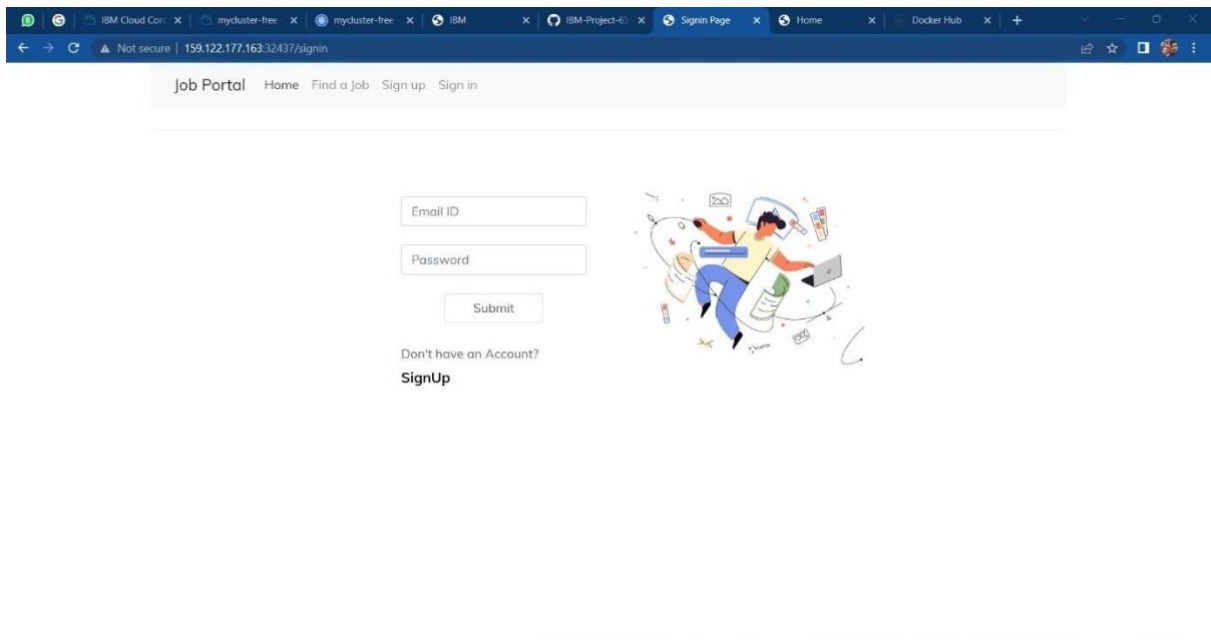
Sign up

Sign in

Illustration of a person working on a computer screen with a ladder and books.

Already have an Account?

[Signin](#)



View the deployed Job-portal flask application by clicking the below link:

<http://159.122.177.163:32437/>